

Rapid Manufacture of Combustion Chambers Using Ductile, High Strength MMCs (1000-803), Phase I

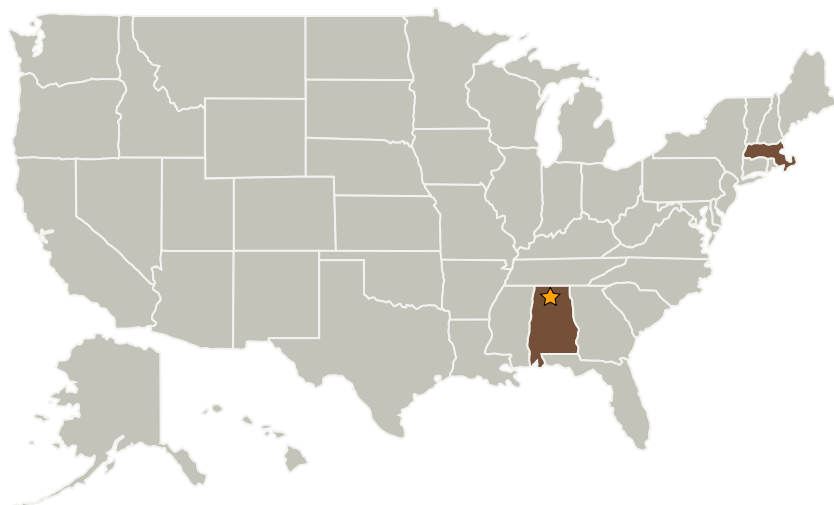
Completed Technology Project (2006 - 2006)



Project Introduction

Triton Systems, Inc. (Triton) proposes to develop a cost-effective manufacturing approach to fabricate combustion chambers for a rocket technology demonstrator engine. The proposed manufacturing process combines Triton's success in fabricating high strength, ductile, discontinuous fiber reinforced aluminum (FRA) composites and rapid prototyping techniques used in the aluminum casting industry. The ability to insert Triton's FRA technology into boost and orbit transfer components supports critical propulsion goals by improving the thrust-to-weight ratio and reducing hardware costs. Significant weight savings will be achieved with Triton's lightweight FRA technology compared to the current nickel superalloy. Hardware costs savings are anticipated with the use of a proven, affordable and high quality casting process to fabricate FRA materials. An added benefit is the ability to incorporate design changes for improved efficiency and/or research and development efforts.

Primary U.S. Work Locations and Key Partners



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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission
Directorate (STMD)

Lead Center / Facility:

Marshall Space Flight Center
(MSFC)

Responsible Program:

Small Business Innovation
Research/Small Business Tech
Transfer

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Organizations Performing Work	Role	Type	Location
★ Marshall Space Flight Center (MSFC)	Lead Organization	NASA Center	Huntsville, Alabama
Triton Systems Inc.	Supporting Organization	Industry	Chelmsford, Massachusetts

Primary U.S. Work Locations	
Alabama	Massachusetts

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Technology Areas

Primary:

- TX01 Propulsion Systems
 - └ TX01.1 Chemical Space Propulsion
 - └ TX01.1.3 Cryogenic